

REMARKS

Reconsideration of the subject application is requested in view of the foregoing amendments and the following remarks.

Claims 10 and 11 have been cancelled. Claims 1, 2, and 12 have been amended. Claims 29-34 have been added.

Claims 1-9 and 12-34 are pending in the application, with claim 1 being independent.

Support for the amendments to the claims and for the newly presented claims may be found in the specification. For example, support for the amendment to claim 1 can be found at paragraphs [0038] and [0044]-[0046], as well as in Figures 1, 1A, and 1B, which show holder 103, magnet 115, cryostat 117, and service end cap 119. Support for new claim 29 can be found at paragraphs [0017] and [0030] and Figure 2. Support for new claim 30 can be found at paragraph [0063] and Figure 1. Support for new claim 31 can be found at paragraphs [0054]-[0056] and Figures 1 and 1A-1C. Support for new claim 32 can be found at paragraph [0042] and Figures 1, 1B, and 1C. Support for new claims 33 and 34 can be found at paragraphs [0008], [0013]-[0014], and [0028] and Figures 1 and 1A. No new matter has been added.

Interview with the Examiner

On January 4, 2008, representatives of Advanced Veterinary Technologies, Inc. ("AVT"), assignee of the above-referenced patent application, met with representatives of the United States Patent and Trademark Office ("USPTO") to discuss the Final Office Action mailed October 31, 2007 ("Final Office Action"). Attending the interview on behalf of the USPTO were Examiner Parikha S. Mehta (the Examiner of record in related application Ser. No. 11/592,118), Examiner Joel Lamprecht (the Examiner of record in the present application as well as related application Ser. Nos. 10/826,321), and Examiner Eric Winaker (collectively, "the Examiners"). Attending the interview on behalf of assignee AVT were Dr. Joseph A. Helpert, Ph.D., a named inventor of the present application and President of AVT, and Paul Berman and Thomas Bradshaw, attorneys for AVT.

The representatives of AVT and the Examiners discussed the outstanding rejections in the present application and in U.S. Application Ser. Nos. 10/826,321 and 11/592,118 (“the ‘321 and ‘118 applications”). The representatives of AVT and the Examiners also discussed the proposed amendments to the claims of these applications that were faxed to Examiners Mehta and Lamprecht on December 28, 2007. Examiners Mehta and Lamprecht suggested that Applicants submit terminal disclaimers to disclaim each application over the other applications and related U.S. Patent No. 7,071,692 (“the Branch patent”) in order to avoid any further obviousness-type double patenting rejections in these applications over the related copending applications and the Branch patent, and to overcome the current obviousness-type double patenting rejections in the ‘118 application.

Applicants agreed to submit such terminal disclaimers in order to help expedite prosecution of the present application. Accordingly, Applicants are submitting herewith three Terminal Disclaimers that disclaim the terminal portion of any patent issuing from the present application that would extend beyond the term of the Branch patent or the terms of any patents issuing from the ‘321 or ‘118 applications, respectively.

Rejection under 35 U.S.C. § 103(a)

Claims 1-28 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,735,278 (“the Hoult patent”) in view of U.S. Patent No. 5,012,217 (“the Palkovich patent”). This rejection is respectfully traversed.

The Hoult patent, which relates to a surgical procedure with magnetic resonance imaging, discloses RF shielding for a magnet 14 in the following arrangement: a layer 71 is applied on the inside of a bore 21 of the magnet 14, covering the whole of the inside surface of the bore; an electrically conductive fabric bag 72 wraps around a lower part of a patient and connects to the frame of the magnet via electrical straps 74; and a curtain 75 of electrically conducting fabric is suspended over the open mouth of the magnet 14 at the end opposite to the patient (see Fig. 8).

As observed in the Office Action, the Hoult patent does not disclose a radio-opaque cryostat. Office Action, page 3. The Examiner cites to the Palkovich patent for its disclosures relating to a cryostat in a magnet assembly. Office Action, p. 3, citing the Palkovich patent, col. 6, lines 4-12 and col. 6, lines 53-61. According to the Examiner, it is well-known that cryostats may comprise radio-opaque material such as iron that would provide RF shielding. The Examiner asserts that it would have been obvious to one skilled in the art to modify the NMR apparatus of the Hoult patent to employ the magnet and cryostat of the Palkovich patent.

Independent claim 1 has been amended to recite “a radio-opaque holder having a rigid surface defining an opening at a magnet end that substantially matches an opening defined by a patient-end surface of the NMR magnet.” Independent claim 1 also has been amended to recite that “when the rigid surface of the holder abuts and adjoins to the patient-end surface of the NMR magnet, the radio-opaque covering, the radio-opaque portion of the cryostat, and the holder form a substantially complete and substantially continuous RF shield operative to prevent RF signals from interfering with an NMR procedure conducted using the NMR magnet.” Neither the Hoult patent nor the Palkovich patent discloses or renders obvious these recitations.

In particular, neither the Hoult patent nor the Palkovich patent discloses or renders obvious a “rigid surface” of a holder that “abuts” a “match[ing]” surface of an NMR magnet. The Hoult patent does not disclose that the fabric bag 72 has a rigid surface. The opening of Hoult’s fabric bag 72 also does not “match” the opening of the magnet, nor does it “abut” the magnet. Rather, the fabric bag 72 may only be electrically connected to a “suitable frame element” on the magnet 14 by a series of straps 74. Furthermore, Hoult’s layer 71 and the fabric bag 72 do not form a substantially complete or substantially continuous RF shield. As shown in Fig. 8 of the Hoult patent, any RF shielding formed when the fabric bag 72 is combined to the magnet apparatus would have at least two substantial gaps, and therefore would not be substantially complete or substantially continuous, as recited in amended claim 1.

As Applicants explained in response to a prior Office Action, one of ordinary skill in the art would not combine the teachings of the Hoult patent and the Palkovich patent in the manner suggested in the Office Action, and the Section 103(a) rejection of the present claims

should therefore be withdrawn. The entirety of the Palkovich patent is directed explicitly toward magnetic shielding, not radio-frequency (RF) shielding. Specifically, Palkovich makes use of a hybrid (active and passive) magnetic shield shielding arrangement for a solenoid cryogenic magnet to effectively reduce the magnetic field generated by the magnet. The Examiner cites Palkovich as teaching a “four-fold increase of the shielding factor” (col. 6, line 60), but this is referring to a magnetic shielding factor. Nowhere in the Palkovich patent is there any mention of RF shielding, much less any recognition that a magnet itself can provide RF shielding in a system according to claim 1 of the present application.

Therefore, one of ordinary skill in the art, perceiving a deficiency in the Hoult patent with respect to RF shielding, would not look to the Palkovich patent, which relates to improvements in magnetic shielding, in order to achieve a substantially complete RF shield. It is Applicants’ own disclosure in the present application that teaches that the cryostat electrically couples to a holder and covering to provide a substantially complete and substantially continuous RF shield. Neither the Hoult patent nor the Palkovich patent disclose this feature or render it obvious.

Further, for the reasons discussed above, the Hoult patent does not disclose or render obvious the recitations of claim 1. The Palkovich patent does not disclose or render obvious any element that corresponds to a holder or bag and therefore does not remedy the deficiencies of the Hoult patent.

For all of the reasons discussed above, the Hoult patent and the Palkovich patent do not disclose or render obvious the recitations of claim 1.

Dependent claims 2-34 are also patentable by reason of their dependency from claim 1 and further due to the additional features that they recite. For example, new claim 31 recites that “the RF shield is configured to enclose all of the ancillary coils and magnets [associated with a magnetic resonance imaging process] so that there are no ancillary coils and magnets outside the RF shield.” The Hoult patent requires electrical coils 76 to aid in stabilizing the magnetic field when the magnet is moved toward a patient for conducting a magnetic resonance imaging


process. Because these coils 76 are located outside the RF shielding provided by layer 71, Hoult's magnetic resonance system does not disclose or render obvious the recitations of claim 35. New claim 32 recites that the rigid surface of the holder and the matching surface of the magnet are substantially circular in shape. Hoult's fabric bag does not define a specific shape and therefore does not define a substantially circular and rigid shape, as recited in claim 36.

Accordingly, Applicants submit that the instant Section 103(a) rejection of the claims cannot properly be maintained.

In view of the above, Applicants submit that the subject application is in condition for allowance. Favorable consideration and passage to issue of the application are respectfully requested.

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Respectfully submitted,

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